

Prerequisite

Software (python 3.7.0)

Date	01 November 2022
Team ID	PNT2022TMID36140
Project Name	Hazardous Area Monitoring for industrial plant Powered by IoT

TASK:

Idle python 3.7.0

```
#!/usr/bin/env python3
# -*- coding: utf-8 -*-
# Author: [Your Name]
# Date: 01/11/2022
# Description: This script is used to monitor the temperature of a hazardous area. It uses the I2C bus to communicate with the sensor.

import sys
import time
import smbus2

# Define the I2C address of the sensor
I2C_ADDRESS = 0x48

# Define the I2C bus
bus = smbus2.SMBus(1)

# Define the temperature threshold
TEMP_THRESHOLD = 50

# Define the temperature unit
TEMP_UNIT = 'C'

# Define the temperature scale
TEMP_SCALE = 1

# Define the temperature offset
TEMP_OFFSET = 0

# Define the temperature conversion function
def temperature_conversion(temperature):
    temperature = (temperature - TEMP_OFFSET) * TEMP_SCALE + TEMP_UNIT
    return temperature

# Define the temperature monitoring function
def temperature_monitoring():
    # Read the temperature from the sensor
    temperature = bus.read_i2c_block_data(I2C_ADDRESS, 0x00, 2)
    temperature = temperature[0] + temperature[1] * 256

    # Convert the temperature to the required unit
    temperature = temperature_conversion(temperature)

    # Print the temperature
    print('Temperature: {} {}'.format(temperature, TEMP_UNIT))

# Define the main function
def main():
    # Start the temperature monitoring
    temperature_monitoring()

# Run the main function
if __name__ == '__main__':
    main()
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